

Supplementary Table S3. Marker-trait association analysis and clinical parameters of the subgroup of Estonian oligozoospermic idiopathic infertility study sample defined according to the World Health Organization 2010 criteria (sperm count below 39×10^6 /ejaculate; n=408). Parameter data is provided for the subgroups of patients stratified based on their *FSHR* -29 (G>A), *FSHR* Asn680Ser and *FSHB* -211 G/T genotypes.

Parameter ^a	<i>FSHR</i> -29 G/A (rs1394205)			<i>FSHR</i> Asn680Ser (rs6166)			<i>FSHB</i> -211 G/T (rs10835638)		
		mean \pm SD median (5-95)	<i>P</i> -value beta (SE) ^b		mean \pm SD median (5-95)	<i>P</i> -value beta (SE) ^b		mean \pm SD median (5-95)	<i>P</i> -value beta (SE) ^b
FSH (IU/L)	G/G	8.7 \pm 7.6 6.2 (1.9 – 25.2)	0.35 -0.36 (0.41)	Asn/Asn	8.5 \pm 7.1 6.1 (2.0 – 23.8)	0.59 0.17 (0.33)	G/G	9.0 \pm 7.4 6.4 (1.9 – 25.1)	0.00011* -1.49 (0.45)
	G/A	7.8 \pm 6.1 6.0 (1.9 – 22.7)		Asn/Ser	7.6 \pm 6.3 5.5 (1.7 – 20.4)		G/T	6.9 \pm 5.5 5.0 (1.8 – 20.2)	
	A/A	7.1 \pm 4.8 5.8 (1.1 – 18.3)		Ser/Ser	9.9 \pm 8.3 7.0 (1.8 – 30.6)		T/T	4.0 \pm 3.1 3.0 (0.7 – 10.5)	
LH (IU/L)	G/G	4.7 \pm 2.4 4.2 (1.7 – 9.0)	0.80 0.04 (0.18)	Asn/Asn	4.8 \pm 2.3 4.4 (1.7 – 9.0)	0.86 0.02 (0.14)	G/G	4.7 \pm 1.8 4.6 (2.7 – 8.2)	0.87 -0.03 (0.20)
	G/A	4.5 \pm 1.9 4.3 (1.8 – 7.6)		Asn/Ser	4.4 \pm 1.9 3.9 (1.6 – 7.6)		G/T	4.5 \pm 1.9 4.2 (1.4 – 8.1)	
	A/A	4.9 \pm 1.4 5.0 (2.7 – 7.0)		Ser/Ser	5.1 \pm 2.6 4.3 (2.1 – 9.1)		T/T	4.7 \pm 1.8 4.6 (2.7 – 8.2)	
Inhibin B (pg/mL) ^c	G/G	81.4 \pm 52.6 73.8 (12.7 – 169.2)	0.91 0.86 (7.77)	Asn/Asn	82.5 \pm 46.6 79.1 (10.0 – 172.1)	0.09 -9.36 (6.28)	G/G	57.6 \pm 14.8 57.9 (43.7 – 70.8)	0.56 -4.56 (8.56)
	G/A	86.1 \pm 55.7 76.9 (10.0 – 187.7)		Asn/Ser	93.8 \pm 66.5 76.9 (24.3 – 206.6)		G/T	78.5 \pm 43.8 74.3 (10.6 – 176.9)	
	A/A	136.7 \pm 148.3 68.3 (15.6 – 374.5)		Ser/Ser	58.1 \pm 47.0 48.5 (10.0 – 173.2)		T/T	57.6 \pm 14.8 57.9 (43.7 – 70.8)	
Total testosterone (nmol/L)	G/G	18.6 \pm 6.2 17.7 (10.4 – 29.8)	0.21 -0.69 (0.58)	Asn/Asn	19.7 \pm 7.2 18.5 (10.3 – 32.9)	0.14 -0.66 (0.46)	G/G	18.4 \pm 6.7 17.7 (9.3 – 31.5)	0.32 0.65 (0.64)
	G/A	18.8 \pm 8.0 17.9 (8.1 – 35.9)		Asn/Ser	17.6 \pm 6.4 17.0 (9.1 – 30.0)		G/T	19.2 \pm 7.2 17.6 (10.2 – 32.1)	
	A/A	16.0 \pm 4.2 16.1 (10.0 – 26.6)		Ser/Ser	18.9 \pm 7.0 17.8 (9.5 – 32.3)		T/T	18.7 \pm 5.0 18.5 (10.5 – 27.1)	

Estradiol (pmol/L)	G/G	101.4 ± 37.2 91.0 (73.0 – 169.0)		Asn/Asn	106.0 ± 45.7 90.3 (73.0 – 179.8)		G/G	103.8 ± 42.3 91.4 (73.0 – 174.5)	
	G/A	104.1 ± 43.4	0.87	Asn/Ser	99.2 ± 35.5	0.48	G/T	96.4 ± 27.1	0.45
		90.5 (73.0 – 173.6)	-0.44 (2.80)		87.0 (73.0 – 155.6)	-1.55 (2.22)		86.5 (73.0 – 153.1)	-2.27 (3.07)
	A/A	91.7 ± 29.6 73.4 (73.0 – 177.0)		Ser/Ser	101.7 ± 34.3 93.0 (73.0 – 197.0)		T/T	108.6 ± 49.3 78.9 (73.0 – 201.0)	
Total testes volume (mL)	G/G	38.4 ± 9.3 39.0 (22.0 – 52.0)		Asn/Asn	40.7 ± 11.0 42.0 (24.0 – 53.8)		G/G	39.3 ± 10.4 40.0 (22.0 – 52.5)	
	G/A	41.1 ± 11.3	0.043	Asn/Ser	39.2 ± 9.6	0.023	G/T	40.3 ± 9.3	0.68
		41.0 (24.2 – 60.0)	1.82 (0.90)		40.0 (22.0 – 55.5)	-1.63 (0.71)		40.0 (25.1 – 59.7)	-0.42 (1.00)
	A/A	38.9 ± 9.8 36.0 (20.0 – 56.0)		Ser/Ser	37.4 ± 9.7 36.0 (22.0 – 52.9)		T/T	32.1 ± 7.8 32.5 (22.0 – 47.0)	
Semen volume (mL)	G/G	3.8 ± 1.7 3.6 (1.2 – 7.0)		Asn/Asn	3.9 ± 1.7 3.6 (1.5 – 7.0)		G/G	3.7 ± 1.6 3.5 (1.3 – 6.9)	
	G/A	3.5 ± 1.6	0.17	Asn/Ser	3.7 ± 1.7	0.14	G/T	3.6 ± 1.7	0.803
		3.3 (1.3 – 6.9)	-0.19 (0.15)		3.5 (1.3 – 7.1)	-0.17 (0.12)		3.3 (1.1 – 7.0)	0.03 (0.17)
	A/A	3.8 ± 2.2 3.2 (1.3 – 9.4)		Ser/Ser	3.5 ± 1.5 3.2 (1.1 – 5.7)		T/T	5.1 ± 1.8 5.1 (2.6 – 7.8)	
Sperm concentration (10⁶/mL)	G/G	4.4 ± 4.0 3.5 (0.1 – 11.8)		Asn/Asn	4.5 ± 3.9 3.6 (0.1 – 11.8)		G/G	4.2 ± 3.9 3.5 (0.1 – 12.0)	
	G/A	4.2 ± 3.7	0.95	Asn/Ser	4.2 ± 3.7	0.63	G/T	4.8 ± 4.2	0.17
		3.0 (0.1 – 11.0)	0.02 (0.31)		3.5 (0.1 – 11.4)	-0.11 (0.25)		3.2 (0.2 – 13.0)	0.48 (0.35)
	A/A	6.1 ± 6.0 6.0 (0.0 – 17.6)		Ser/Ser	4.8 ± 5.0 3.0 (0.1 – 18.0)		T/T	4.6 ± 4.0 3.3 (0.2 – 11.0)	
Total sperm count (10⁶)	G/G	14.2 ± 11.3 12.0 (0.2 – 34.5)		Asn/Asn	14.9 ± 11.4 13.8 (0.2 – 34.2)		G/G	13.6 ± 11.3 11.2 (0.2 – 34.3)	
	G/A	13.4 ± 10.8	0.69	Asn/Ser	13.5 ± 11.0	0.25	G/T	14.7 ± 10.8	0.108
		11.8 (0.2 – 33.3)	-0.38 (1.01)		11.0 (0.2 – 34.3)	-0.86 (0.81)		12.3 (0.6 – 34.2)	1.93 (1.15)
	A/A	16.7 ± 13.8 9.5 (0.1 – 38.1)		Ser/Ser	13.3 ± 11.6 10.6 (0.3 – 34.9)		T/T	18.9 ± 13.0 19.6 (0.9 – 36.0)	

^aData presented as mean ± SD and median (5-95th percentile)

^b*FSHR* -29 A-, *FSHR* 680Ser- and *FSHB* -211 T-allele effects are shown as the estimated linear regression (additive model) statistic β , standard error of the regression (SE) is shown in brackets. Asterisk (*) indicates a significant association, $P < 0.05$ after Bonferroni correction for multiple testing.

^cInhibin B measurements were available for 159 individuals